

MANGROVE MANAGEMENT OPTIONS FOR THE AUCKLAND COUNCIL



DISCUSSION DOCUMENT

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DISCUSSION DOCUMENT

1. MANGROVE ISSUES

Mangroves have largely caused concerns because of their rapid spread in some coastal areas. This has generally occurred because of increasing levels of sediment entering estuarine areas, usually from past or present land use activities, or from changes to water flows (often from roads, culverts or causeways) which has led to increased sedimentation and created new mud-dominated habitat that is favourable for mangroves. Expansion of urban development around estuaries and harbours has also led to a greater awareness of mangroves.

The coastal marine area in Auckland is a highly used and valued open space. Mangrove removal has become a matter of top priority for some communities whose amenity values and use of the coast has been adversely affected by sedimentation and mangrove spread. As a result there have been increasing calls for the council, including Local Boards, to take responsibility for undertaking mangrove removal activities.

In response to the emerging issue of mangrove management, particularly over the last 10 years, and the lack of direction provided on this activity in the Auckland Regional Plan: Coastal (coastal plan), the Auckland Regional Council (ARC) in 2005 initiated a plan change, (Plan Change 4 - mangrove management) to the coastal plan. Plan Change 4 was notified in 2007 and involved a four- year process in accordance with Schedule 1 of the Resource Management Act (RMA). It resulted in a number of changes to Chapter 16 of the coastal plan to include policies and rules for mangrove management. Plan Change 4 was approved by the Minister of Conservation in October 2010 and notified as operative under the new council in March 2011. Because the plan change has only recently been made operative the effect of the new policies and rules is yet to be fully realised.

However, concerns have been expressed that the plan change is inadequate, principally because it does not provide for mangrove removal as a permitted activity in the areas where people have raised concerns, or generally throughout the coastal marine area. Suggestions have been made that a new plan change should be initiated to provide for removal on this basis.

Aside from the issue of how mangrove removal activities are provided for under the regulatory framework of the coastal plan, there are increasing requests for the council to fund mangrove removal activities, including requests from Local Boards. In suggesting this approach reference is frequently made to the mangrove removal activities that are being undertaken by councils in other regions.

This discussion paper outlines the issues relating to mangrove management, how this matter has been provided for in coastal plans, and the community initiatives and removal activities that have been undertaken, in Auckland and in the other regions.

1.1 Conflicting views on mangroves

The recent debate about the values of New Zealand mangroves, particularly their ecological role in coastal ecosystems, has highlighted the need for more comprehensive information. Historically, many of the ecological values, physical processes and biological properties commonly associated with tropical and sub-tropical mangrove forests have also been attributed to New Zealand mangroves, when more recent research suggests that direct comparisons may not apply.



To provide a baseline of information on mangroves in New Zealand to inform the debate on their management the ARC commissioned a review of the current information on mangroves in New Zealand¹ as background to preparing Plan Change 4 (mangrove management) to the coastal plan. (This report is available from www.aucklandcouncil.govt.nz arc website – plans/technical publications May 2007 ARCTP325).)

Some of the key findings of this report include:

- NZ has only one species of mangrove (*Avicennia marina subsp. australisica*) (grey mangrove) also known as Manawa;
- the NZ mangrove is an indigenous species that has existed some thousands of years before human habitation; (e.g. silicified woods from the Kaipara Harbour indicate the presence of mangroves approximately 19 million years ago);
- mangroves are confined to the northern coastline of New Zealand (southern limit Ohiwa Harbour on the east coast and Kawhia Harbour on the west) with frosts playing a defining role in their range;
- mangroves play an important role in erosion control and shoreline protection by slowing the flow of water and blocking waves;
- mangrove organic matter provides a nutrient source for other organisms in the surrounding environment, and the role played by mangroves in estuarine foodwebs is thought to be significant;

¹ The New Zealand mangrove: review of the current state of knowledge; Auckland Regional Council; Technical Publication No. TP325; May 2007

- mangroves are thought to provide an effective juvenile habitat for some fish species, particularly short-finned eel, parore and grey mullet;
- many bird species, including several native species make extensive use of mangroves for roosting, feeding and breeding but no species is totally dependent on mangroves;
- at an estuarine scale it is likely that the loss of habitat diversity as a result of mangrove expansion will lead to an overall loss in biological diversity, but this loss may also be caused by the factors that lead to mangrove spread, such as increased sedimentation and reduced water quality;
- although mangrove expansion is a wide-spread phenomenon, it is also site-specific and variable and depends on environmental factors such as temperature, salinity, wave exposure, nutrient input and sediment loading; this makes having region-wide management approaches difficult;
- to date few conclusions have been reached as to the most effective and/or ecologically sound method of mangrove removal in terms of sediment remobilization and impacts on other organisms including other vegetation types, benthic fauna, shellfish, fish and birds.



In terms of the effectiveness of mangrove management initiatives the overall conclusion of the report was:

*"Regardless of which [mangrove management] approach is decided upon, sustainable management may only be achieved if evaluation of mangrove areas is undertaken on a site-by-site basis. Research has established that processes and effects vary according to the type of mangrove community, whether it is stable or dynamic, and site-specific physical and ecological characteristics defined by a range of factors including geomorphology, climate, sediment input, nutrient status and hydrodynamics."*²

1.2 Areas of mangrove expansion

Historically there has been loss of mangrove habitat through reclamation for farming activities. In response to concerns over the extent of reclamations the Harbours Amendment

² ARCTP325: The New Zealand mangrove: review of the current state of knowledge (pg 10 & 122)

Act 1977 made it illegal to infill for agricultural purposes. In the Auckland region large areas of wetland/mangroves in the Kaipara Harbour were reclaimed prior to the 1970s.

In some areas there is evidence of little change in the extent of mangroves, while in other areas there has been rapid expansion. There is not always evidence of extensive recent change in mangrove extent in the areas where mangroves have been raised as an issue.

The effect of climate change on mangroves is uncertain. It is not known whether rising sea levels will reduce the extent of mangrove distribution due to lower parts of the shore being flooded by the tide more frequently, or becoming permanently submerged. It is also not known whether this potential loss may be compensated for by the levels of sediment from increased storm events accumulating and resulting in a rise in shore level, which may enable mangroves to migrate up-shore.

The ARC and the current council have been made aware of a number of areas where community concerns have been raised about mangroves. These include through the Plan Change 4 process, resource consent applications, incidents of non-compliance, and from Local Boards and community groups.

These include areas in;

- Whangateau and Mahurangi Harbours
- Kaipara Harbour
- Waiwera and Orewa estuaries
- Manukau Harbour (including at Waiuku, Pahurehure inlet, Mangere Bridge, Mangere inlet, Pukaki and Puhinui Creek, Otara Lake, Weymouth coast , Onehunga foreshore, Lees Islands)
- Tamaki River; Tahuna Torea, Panmure Basin, Tamaki Bay
- Hobson Bay
- Upper Waitemata Harbour including Herald Island, Kaipaitiki Creek, Lucas Creek, Whau river, Little Shoal Bay and Cox's Bay



2. MANAGEMENT OF MANGROVE REMOVAL ACTIVITIES IN AUCKLAND

2.1 Regulatory framework: Auckland Regional Plan: Coastal (coastal plan)

Disturbance of the foreshore or seabed (which includes disturbance associated with vegetation removal) is subject to s12 of the RMA and the provisions of the coastal plan.

In the early 1990s when the coastal plan was prepared, mangrove spread was not a significant issue and mangroves were considered to be a valued part of coastal ecosystems, that generally remained under some threat. The policies and rules of the coastal plan made little specific reference to mangroves, and generally sought to protect their ecological values. Some of the Coastal Protection Area 1 (CPA1) areas (most highly valued and vulnerable ecological and geological areas) identified mangrove habitats. This approach was consistent with the policies of the New Zealand Coastal Policy Statement 1994, which emphasised protecting ecosystems unique to the coast, including mangroves.

By the early 2000s mangrove expansion was becoming an issue for some communities and the limitations of the coastal plan provisions, particularly the absence of policy guidance for assessing applications for mangrove removal, became apparent. A prohibited activity rule for mangrove removal in CPA1 areas was also problematic, as some major infrastructure works had no alternative but to remove mangroves in some CPA1 areas.

In response the ARC commissioned a report³ to assess the options for a plan change to the coastal plan. The scoping report on possible changes was considered by the Environmental Management Committee of the ARC in November 2005, who resolved to progress a change to the coastal plan.

2.2 Plan Change 4: Mangrove Management

Plan Change 4 introduced changes to Chapter 16; 'Disturbance of Foreshore and Seabed III: Other than Dredging of Extraction' of the coastal plan.

Plan Change 4 was notified in October 2007 and received 151 submissions. As a result of the hearing process a number of changes were made from the notified version of Plan Change 4, including;

- new policies that provide further guidance for assessing applications, including a policy recognising that mangrove removal may be appropriate where mangroves can be shown to be obstructing or interfering with areas of high public amenity or use, particularly areas formerly or currently used for recreation, water access and navigation (policy 16.4.7)
- a new permitted activity rule was introduced to allow the hand removal of mangrove seedlings (in most areas, apart from areas identified as CPA1 with ecological values associated with mangroves) to enable communities to 'hold the line' on mangrove spread (rule 16.5.3)
- a new permitted activity rule providing for 200m² of mangrove clearance in the General Management Area (majority of the coastal marine area) to enable maintenance and operation of lawful structures and infrastructure and functioning of drainage systems, and 30m² of removal in areas identified as Coastal Protection Area 2 (areas of ecological or geological significance, but more robust than CPA1

³ Mangrove Management: A review of the provisions of the Auckland Regional Plan Coastal and assessment of plan options of mangrove management: Hill, Young, Cooper: November 2005

areas) for these purposes. Larger areas of removal (for these purposes) was provided for as a controlled activity (rules 16.5.2 and 16.5.14)

- a new permitted activity rule to allow for seedling removal in CPA1 areas that are identified as significant wading bird areas and a rule for the removal of mature mangroves in these areas as a controlled activity (rules 16.5.3 and 16.5.15)
- a new discretionary activity rule for mangrove removal in CPA1 areas to maintain ecological, geological, archaeological or heritage values, allow for public access (consistent with maintaining identified values), and the operation, use and functioning of structures, infrastructure and drainage systems (rule 16.5.21)



For the majority of the coast (General Management Area) the removal of mature mangroves is a restricted discretionary activity that requires a resource consent application (coastal permit). This requires a site assessment to be undertaken, and allows for discretion on whether or not an application is granted, and any conditions that should apply. A decision can also be appealed to the Environment Court.

Three appeals to the Plan Change 4 were settled by consent order. Plan Change 4 was approved by the Minister of Conservation in October 2010, and notified as operative in March 2011.

Plan Change 4 involved a four-year statutory process in accordance with Schedule 1 RMA. This involved considerable costs in staff and community input, and time (including consultation, preparing public notices and hearing and decision reports, and settling appeals). It also involved councillor time, (hearing committee, decision making and site visits) and legal costs.

A criticism of the outcome of this plan change is that it has not enabled mangrove removal activities to be generally undertaken on a permitted activity basis (i.e. for removal without the need to obtain a resource consent). This criticism is often based on the mistaken assumption that the mangrove removal activities being carried out by councils in other regions is undertaken on a permitted activity basis.

To clarify the basis that mangrove removal is being undertaken in other regions, a comparison of provisions of Plan Change 4 with the policies and rules of the coastal plans of the other regions (where mangroves grow), is provided in the Table 1 (attached). A discussion on the differences between the coastal plans and council approaches is provided in section 3.

2.3 Integrated land and sea management; Comprehensive Coastal Management Plans

The effective long term management of mangrove colonisation requires a reduction in the sediments and nutrient loads entering estuarine and harbour areas. To be achieved this requires integrated management of both catchments and marine receiving environments.



The coastal plan recognises this connection and supports significant mangrove removal activities being considered in the context of a Comprehensive Coastal Management Plan (policy 16.4.8), which involves an assessment of both land and sea interactions (Appendix K provides guidance on the content and development of these plans).

Previously the ARC worked jointly with the Papakura and Franklin District Councils to address mangrove removal proposals in context of an integrated plan for a section of both land and sea through the preparation of Coastal Compartment Management Plans⁴ (CCMP). These pilot CCMPs aimed to address mangrove issues in conjunction with other coastal enhancements, such as walkways, boat ramps, ecological restoration and protection of heritage sites. CCMPs plans were also prepared by other councils to address local coastal issues, and not all of these included mangrove management activities (e.g Algies Bay).

The Pahurehure and Waiuku CCMPs were based on investigation and research and developed through a comprehensive process of community consultation. They identified areas where mangrove removal would meet community amenity aspirations, and areas where mangroves should be retained for their ecological values. They also identified general cost and information requirements so that the district council could include these in their Annual Plan. However, a resource consent application, including an assessment of site-specific details to confirm that removal in the areas identified were appropriate, was still required before any mangrove removal could be undertaken.

The Pahurehure CCMP took two years (including hearings) to complete, and cost approximately \$75,000. The ARC and Papakura District Council equally contributed to the cost. The Waiuku Estuary Management Plan took over three years to complete, and cost \$47,000. Franklin District Council contributed \$15,000 towards the cost.

Some people have expressed disappointment in the CCMP process as it did not result in mangrove removal being permitted in the areas identified for removal in the CCMP without

⁴ Pahurehure Coastal Compartment Management Plan (2006) and Waiuku Estuary Management Plan (2009)

the need for a resource consent, which involves significant costs. These costs are additional to those involved in undertaking removal work and any monitoring that may be required.

2.4 Views on the outcome of the Plan Change and Coastal Compartment Management Plan process

Both the plan change and CCMPs involved lengthy and expensive investigation, consultation and hearing processes.

There are various views on the outcome of these processes; some people believe they provide a good framework for future mangrove management, some believe they have gone too far in providing for mangrove removal. Others consider that they have not 'delivered', as they did not result in communities being able to remove mangroves as a 'permitted activity' in the areas they had identified as suitable for mangrove removal.

In most cases the rules of the coastal plan (other than as provided for as permitted activities) require a resource consent application for mangrove removal. This enables a site by site analysis of removal proposals to be undertaken to ensure sustainable management. However the time and costs of this process, and in undertaking the removal activities (including disposal of mangroves), are difficult for communities to resource. CCMPs assist with the resource consent process as they provide much of the background information needed for an application's assessment of environmental effects. However, they may not provide all the information required for a site specific assessment, and are non-statutory plans that do not replace the need for a resource consent.

2.5 Resource Consent Applications (coastal permit) and removals

From 2006 to November 2010 the ARC processed 29 coastal permits for mangrove removal. Of these, four were granted to private applicants (two were boat clubs), 18 were granted to territorial authorities, and seven were granted to utility operators.

Fourteen of these 29 coastal permits were for mangrove removal that was consequential to, or required, to facilitate other works. A number of the remaining 15 were in combination with dredging consents to restore waterways.

Areas that were consented for mangrove removal ranged from a few individual trees, to 27 hectares in the Pahurehure Inlet. Processing costs ranged from the non-notified coastal permit application deposit of \$1000 for small removals, to \$38,000 for the 27 hectare Pahurehure Inlet application, which went through a full hearing process.

The unlawful removal of mangroves is a relatively common occurrence, and has been undertaken for a range of reasons including to enhance views, to help sell property, or for recreational use or access. Some people are not aware that they need to obtain a resource consent to remove mangroves. Others have expressed frustration at the costs of obtaining consents, and over the failure of the regional or district council to undertake removal activities. Unlawful removals range from individual trees, to the removal of approximately 3.7 hectares at a single site in 2010.



The ARC did not provide funding assistance for resource consent applications, or undertake mangrove removal activities. Mangrove removal activities in specific local areas were considered to be best addressed by the relevant territorial authority as part of their maintenance and enhancement of public facilities, parks and related coastal areas. Through this process the territorial authority could make decisions on the priority to be given to local projects, including mangrove removal, similar to other initiatives such as beach replenishment, walkways and boat ramps.

3. MANAGEMENT OF MANGROVE REMOVAL ACTIVITIES IN OTHER REGIONS

3.1 Regulatory framework

Table 1 provides a comparison of the policies and rules of the Auckland coastal plan with those of other regional coastal plans that provide for mangrove management. This comparison shows that the Auckland's coastal plan has more comprehensive policies and permissive rules for mangrove management than the other coastal plans. For example Auckland's coastal plan;

- includes the most comprehensive policies recognising the circumstances where removal may be appropriate, including a policy that recognises that mangrove removal (outside CPA1 areas) may be appropriate where mangroves are interfering with areas of high public amenity or use (water access, recreation and navigation) (policy 16.4.7)
- provides for the greatest level of mangrove removal that can be undertaken on a permitted activity basis; for example Waikato Regional Council's coastal plan provides for 10m² of removal as a permitted activity to provide access to a structure whereas Auckland provides for 200m² of removal in the General Management Area (majority of the coast) as a permitted activity for access to a structure, for infrastructure or the functioning of drainage systems (rule 16.5.2)

- provides for removal of areas larger than those that need no resource consent (for structures, infrastructure and drainage) to be applied for as a controlled activity (i.e the consent must be granted but can be made subject to conditions). Applications for removal for other purposes in most coastal areas (General Management Area) are provided for as a restricted discretionary activity. In other coastal plans mangrove removal, apart from very minor levels of permitted removal, are provided for as either restricted discretionary or discretionary activities.
- is the only plan that provides for mangrove removal in identified significant wading bird areas as a controlled activity.
- is the only coastal plan that provides for seedling removal as a permitted activity (outside some CPA1 areas) (rule16.5.3).



What can be concluded from this analysis is that Auckland's coastal plan provides a more comprehensive policy base for assessing proposals, and provides for a much greater level of removal on a permitted and controlled activity basis than other coastal plans. However, aside from these differences, the coastal plans are otherwise similar in requiring a resource consent application for most mangrove removal activities.

3.2 Resource consent applications and funding for removal activities

The main difference in approach between the regional councils is not the regulatory framework, but the funding that is provided for resource consent applications and mangrove removal activities.

A common criticism is that ARC did not fund mangrove removal works, as compared to the Bay of Plenty and Waikato Regional Councils, who funded resource consent applications and mangrove removal activities (as discussed below). The Bay of Plenty and Waikato Regional Councils also put resources into providing information to communities on wider catchment management and restoration programmes in conjunction with mangrove removal activities.

Recently Northland Regional Council established a fund to meet the costs of the assessment of effects and resource consent process for community groups seeking to undertake mangrove removal.

3.3 Northland Regional Council (NRC)

In 2010 NRC initiated a “Mangrove Management Support Programme”. This offered a fund of \$120,000 in the 2010/2011 Annual Plan to assist communities with meeting the costs of the preparation of Assessments of Environmental Effects (AEE’s), and the resource consent processing costs for mangrove removal proposals.

Nine applications for mangrove removal are currently being progressed. NRC has assigned \$25,000 for preparation of the AEEs, and \$95,000 for resource consent processing costs. NRC is unsure at this stage whether the Mangrove Management Support Programme will be repeated, and does not currently offer any other funding towards mangrove removal projects.

Recently an application to NRC (separate from the applications under the support programme) for five coastal permits to remove approximately 87 hectares of mangroves in Mangawhai Harbour (effectively all the mangroves in the harbour) was rejected by three independent commissioners in April 2011.

NRC made a change to their regional coastal plan to address mangrove management (made operative in February 2010). The plan change clarified the circumstances in which mangrove removal may be needed and applied a controlled or restricted discretionary activity status for most removals.

3.4 Bay of Plenty Regional Council (BoPRC) (formerly known as Environment Bay of Plenty)

Mangrove removal has been undertaken in Tauranga Harbour for over 10 years; from seedling removal to removal of larger mature tracts for recreational access. In the early 2000s the majority of this removal was undertaken unlawfully, in ignorance of the regulatory framework that required a resource consent for removal as a discretionary activity.

In 2004 consents were sought for mangrove removal by the Waikaraka Estuary Managers and by Tauranga City Council in support of several distinct communities within the city area. These consents were very controversial and were appealed to the Environment Court. A decision by the Environment Court to grant these two consents was made in 2006.

The major focus for BOPRC is gaining recognition that mangrove growth is a symptom of increased levels of sediment entering the coast. Support for community initiated mangrove removal goes hand-in-hand with also taking actions to address the cause of mangrove spread.

In 2006 an Estuary Care Programme was set up by BOPRC with support from Tauranga City Council, Western Bay of Plenty District Council and the Department of Conservation. The programme provided a dedicated staff position (within BOPRC) to provide assistance to community groups. Through this programme the BOPRC provides technical support and other resources to community groups to apply for resource consents, and with complying with the relevant monitoring and consent conditions. The programme also provides support

and resources for estuarine habitat restoration activities, such as riparian and wetland planting, weed and predator control, and rubbish clean ups.

A catchment management framework is currently being developed by BOPRC for Tauranga Harbour on a sub-catchment basis. This will help to prioritise actions under the Sustainable Land Use Implementation programme, and promote riparian management and land use change on erosion prone land. BOPRC has budget included in the council's 10-year Long Term Plan for programmes aimed to encourage more sustainable land management practices by rural land owners.

There are currently ten estuary care groups around Tauranga Harbour that have consent to manage mangroves within eleven distinct sub-estuaries. Each group is established as a legal entity, incorporated society, or a similar entity, to enable them to be able to be issued with a resource consent.

In 2009 BOPRC obtained a coastal permit for the mechanical removal of mangroves from a 92 hectare area spread across 11 estuaries within the Tauranga Harbour. The consent applies to the areas that had already obtained consent for mangrove removal, but obtained approval to remove mangroves using a specially modified digger (known as the 'mangrove mulcher'), and to dispose of the resulting mangrove 'mulch' in the harbour. The budget for this work was written into BOPRC's Long Term Plan. To date the consent fees, staff time and trials, have cost BOPRC approximately \$90,000, which has been met through existing budgets. The removal work itself was put to tender, and \$140,000 has been allocated in BOPRC's Long Term Plan for this work.

Since work began concerns were raised that the deposited mulch was not being flushed from some areas quickly enough, and was creating anoxic conditions due to its smothering effect. In response, BOPRC undertook trials of alternative methods of removal and disposal. These included using a beach groomer to harvest the mulch, and a 'bucket dredge', (rather than a mulching attachment on the dredge) and disposing of the removed mangroves to a barge and then to a truck for land disposal. While both methods appeared to reduce the level of anoxic effects, they proved to be prohibitively expensive. BOPRC consider that as anoxic mud and hydrogen sulphide producing conditions persist regardless of the removal method, and as observation of the earliest mechanically cleared sites showed positive signs that they were recovering towards conditions similar to the surrounding open mud flats, that mulching as originally planned will continue for the remaining 20 hectares.



3.5 Waikato Regional Council (WRC) (formerly known as Environment Waikato)

WRC has applied (through an external consultant) for a coastal permit to remove 31.5 hectares of mangroves, plus 6.5 hectares of mangrove tree remains, from the Whangamata Harbour. The application is yet to go to hearing. The consent and removal costs for Whangamata Harbour will be paid for by a targeted rate. The removal costs are anticipated to be in the order of \$400,000.

WRC also applied for and obtained a coastal permit for removal of juvenile mangroves over a 5.9 hectare area, and ongoing removal of seedlings over a 120 hectare area within the Wharekawa Harbour in 2010. Removal works are to be undertaken by volunteers supervised by WRC staff.

WRC offers grants of up to \$5000 under its Environmental Initiatives Fund, however to date this has not been allocated to mangrove removal projects.

3.6 Research on mangrove removal methods

At the present time there is little scientific information on the effects of mangrove removal, for example the effects of the release of fine sediments, nutrients and contaminants. The biological and physical processes affecting the long term recovery and rehabilitation of cleared areas is also little understood.

NIWA, as part of a government research funded project, is investigating the short and medium-term effects of mangrove removal methods. As part of this project NIWA are monitoring the effects of the mechanical removal at Tauranga. This information, together with information collected by the BOPRC Science team and Estuary Care staff, will provide some indicative timelines for ecosystem recovery. This information, together with data from other removals (and removal methods) undertaken in other areas, will be used to develop guidelines for councils and community groups, including;

- methods for mangrove removals that minimise adverse impacts
- indicative timelines for ecosystem recovery
- key characteristics of sites that are (or are not) associated with successful mangrove removals.



4 OPTIONS FOR THE AUCKLAND COUNCIL

There are both regulatory and operational options available to the council to address the issue of mangrove management.

4.1 Regulatory actions

In terms of the Resource Management Act (RMA) regulatory framework provided through the coastal plan the courses of action available to the council include;

- undertaking mangrove management under the operative policy and rule framework of the coastal plan until such time as the review of the coastal plan is incorporated into the unitary plan
- directing that the review of the coastal plan incorporate a regional assessment of mangrove management issues, including consultation on the areas where communities wish to remove mangroves, and a review of the policies and rules relating to mangrove removal, or
- as a separate process from the coastal plan review, direct that as a matter of priority a new plan change be initiated (Schedule 1 RMA) with the intention of introducing more permissive policies and rules to the coastal plan (for example by identifying areas where mangrove removal could be a permitted or controlled activity).

As discussed above in section 3.1 Plan Change 4 (mangrove management) contains more permissive policies and rules for mangrove management than those in the Northland, Waikato and Bay of Plenty regional coastal plans (who also manage mangroves).

As Plan Change 4 has only recently been made operative there has not been enough time, or applications processed, under the new provisions to determine the effect of the revised policy and rule framework.

A review of the coastal plan (made operative in 2004 and required to be reviewed every 10 years) will be undertaken and incorporated into the Unitary Plan. This process will include consultation with community groups and stakeholders, and could include a detailed analysis of the areas where a more permissive mangrove management policy and rule basis is sought. The outcome could be that some areas are identified where mangrove removal is proposed to be provided for as a permitted or controlled activity.

Initiating a more immediate plan change process to review Plan Change 4, separate from the comprehensive review of the coastal plan, would have to follow an RMA (Schedule 1) process that would overlap with that required for the comprehensive review. This would essentially result in duplicating the process and resources of the wider plan review. It is therefore recommended that a review of the mangrove management provisions of Plan Change 4 be incorporated within the wider review of the coastal plan.

This recommendation would mean that mangrove management activities would continue to be subject to the ARP:C provisions (Plan Change 4) until such time as any new policy and rule changes introduced into the unitary plan have effect.

4.2 Operational actions

In terms of the operational side of implementing mangrove management proposals the governing body (committee) could assist and support Local Boards by;

- recognising the role of Local Boards in mangrove management and removal in the development of the Council's Long Term Plan, Annual Plan and Local Board Agreements, and
- ensuring that support is provided to Local Boards, such as allocating staff and resources to scope out options and likely costs, and for the operational aspects once projects are approved. Support will also be needed for catchment management programmes and on-going monitoring and maintenance activities.

Local communities, who feel that their amenity, access or navigation opportunities are being compromised by mangroves are the main initiators of proposals for mangrove management, and want the council take responsibility for this work.

Early indications are that a number of the Local Boards intend to pursue mangrove removal activities, through identifying this activity in their draft Local Board Plans. This reflects that for some communities the removal of mangroves is a matter of priority that they wish to have addressed as soon as possible.

However, there appears to be little legacy council funding available for mangrove management, other than funding that may be included within an operational budget associated with a council-owned asset (such as mangrove removal to maintain the

functioning of drainage systems). The Papakura Local Board Agreement appears to be the only one that identifies legacy funding (2011-2012) for consented mangrove removal at Pahurehure Inlet.

At present the council does not have the staff resources or budget to service the range of activities associated with mangrove management that are identified in Local Board Plans. The Council needs to approve appropriate budget and resources through the 2012-2022 Long Term Plan process if it wishes to undertake these activities within the next three years.

To meet this anticipated need an investment proposal for estimated costs to service the range of activities associated with mangrove management activities has been submitted to the 2012-2022 Long Term Plan process. If the investment proposal is rejected, or is only partially successful, alternative funding mechanisms such as targeted rating may need to be considered. The resourcing and costs associated with implementing mangrove removal proposals include;

- initial officer assessment and advice on areas proposed for removal;
- preparing an assessment of effects and resource consent application;
- the consent processing, hearing (commissioner) and potential Environment Court appeal costs (legal and technical expertise);
- mangrove removal works and disposal;
- consent condition monitoring;
- on-going monitoring of the impacts and the success/outcome of areas where mangroves are removed;
- on-going maintenance, such as annual mangrove seedling removal to retain cleared areas;
- community group co-ordination and support, including with associated catchment restoration and enhancement programmes to address sediment issues;
- best practise advice and education.

If the investment proposal is approved, a decision will also need to be made as to whether the governance of the programme will sit with the governing body or with Local Boards.

The detail on how mangrove-related activities would be managed between Local Boards, the governing body and council department managers, as well as between any funding in Local Board Agreements and in council department budgets, has yet to be determined. For example, if the investment proposal is approved a future decision will need to be made as to whether the control of the programme sits with the governing body, with Local Boards, or with both.

Officers believe that Local Boards with their local knowledge would play a key role in assessing the merits of proposals for mangrove management, and in making decisions on the areas that will proceed through a consent process.

In the interim, and given the need to provide support to Local Boards as soon as possible, council officers are preparing a guideline to assist in;

- outlining the matters that should be considered in the initial assessment of areas proposed for mangrove removal (incorporating the policy guidance provided in Plan Change 4)
- providing information on options and best practise guidance on removal and disposal methods, and monitoring requirements
- providing advice on the assistance the council can provide Local Boards and community groups, including practical assistance for on-going activities such as yearly seedling removal activities and catchment restoration projects

4.3 Actions to support integrated land and water management and local community groups

Any long term solution to mangrove expansion requires an integrated land-sea approach which aims to reduce the levels of sediment entering the coast from adjoining catchments. Targeted restoration and enhancement programmes in catchments where mangrove expansion is an issue helps to raise awareness, and to address the causes of the problem. This is the approach taken by the Bay of Plenty Regional Council, where mangrove removal is undertaken in association with catchment management and restoration programmes.

Mangrove removal activities in Auckland (e.g in the Pahurehure Inlet at Papakura and at Waiuku), and in other regions, often rely heavily on the work of local community groups, as well as assistance from councils. While new mechanical methods of mangrove removal are evolving, these alternatives will not always be appropriate, or be able to be used. It is likely that many mangrove removal projects will rely on community involvement, including with on-going seedling removal to ensure that mangroves do not rapidly re-establish themselves in cleared areas.

To support catchment management programmes and on-going monitoring and maintenance associated with mangrove removal activities, dedicated staff will be needed to provide information and assistance to community groups, both in undertaking mangrove removal activities and in catchment initiatives aimed at reducing sediment entering the coast.



5 CONCLUSION

Auckland's coastal plan provides a balanced policy and rule framework for mangrove removal activities and provides for greater levels of removal on a permitted activity basis than other regional coastal plans.

Initiating a new plan change to introduce a more permissive RMA policy and rule framework (e.g. for mangrove removal in specific areas, or more generally, as a permitted activity) would take at least two or three years to proceed through a Schedule 1 RMA process. This process, which does not provide any certainty of outcome (with the ability for decisions to be appealed to the Environment Court), is likely to frustrate communities who want 'immediate' action to be taken where mangroves are affecting their use and enjoyment of the coast. A new plan change at the present time would also be an inefficient use of council time and resources, as a review of the policies and rules relating to mangroves can be included in the wider review of the coastal plan that will be incorporated into the Unitary Plan.

The coastal plan review can incorporate consultation and assessment of the areas where mangrove spread is considered an issue and whether more permissive rules for removal could apply. However, any plan change or review has to be prepared under the framework of the RMA and proceed through a public process where the decisions made can be subject to appeal to the Environment Court. It is unlikely that all of the areas where people would like to remove mangroves on a permissive basis will succeed in being provided for in this way.

Until the review of the coastal plan is incorporated into the Unitary Plan, and the new provisions have effect (are not subject to appeal), the more cost-efficient and timely way for the council to address community concerns is to allocate funding for resource consent applications and mangrove removal works that are in the community interest, similar to the other councils dealing with mangrove management.

Local Boards with their local knowledge are well placed to play a key role in assessing the merits of proposals for mangrove management, and in making decisions on the areas that will proceed through a consent process.

Efficiencies might be gained where adjacent Local Boards coordinate their application processes. Resource consent processing should also become simpler as more is understood about methods of removal that minimise adverse impacts, on-going maintenance requirements, and the characteristics of sites that have the most successful outcomes.

Long term sustainable management requires integrated management between catchments and the coast, and council will need to develop and support community partnerships to coordinate both removal, maintenance and restoration projects.

Council budget and resources do not presently provide for the range of activities associated with mangrove management. Resources and budget will need to be approved through the 2012-2022 Long Term Plan process before the Council can undertake these activities. If the investment proposal is rejected, or is only partially successful, alternative funding mechanisms such as targeted rating may need to be considered.

The detail of how mangrove-related activities would be managed between Local Boards, the governing body and council department managers, as well as between any funding in Local Board Agreements and in council department budgets, will need to be determined.

6 RECOMMENDATIONS

It is recommended that:

- i) mangrove management be undertaken under the existing policy and rule framework of the Auckland Regional Plan: Coastal (ARP:C) (Plan Change 4 – mangrove management) until such time as the review of the ARP:C is incorporated into the Unitary Plan
- ii) the review of the coastal plan for inclusion in the Unitary Plan incorporate a regional assessment of mangrove management issues, including analysis and consultation on the areas where communities wish to remove mangroves on a more permissive policy and rule basis, either through the initial notification or a subsequent variation if the timeframe does not allow time for a regional assessment
- iii) Local Boards have a key role in assessing the merits of proposals for mangrove management and in making decisions on the areas that will proceed through a consent process

**Summary comparison of coastal plan policies and rules for mangrove removal
(refer to relevant coastal plan to see full provisions that apply)**

Council	Policy on mangrove removal (From each regions regional coastal plan)	Mangrove removal rules (Permitted activity = no consent required if conditions met. Controlled Activity/Restricted Discretionary Activity/Discretionary Activity/Non-complying Activity = consent required)
Auckland Council	Specific policy stating - mangrove removal may be appropriate for interfering with areas of high public amenity or use, access or navigation applies to areas other than in CPA1 ¹ .	<p>Permitted Activity rules:</p> <ul style="list-style-type: none"> • Allow for removal of seedlings in all areas other than CPA1⁵ that have values associated with mangroves. • Allow for seedling removal in CPA1 areas identified as significant wading bird areas • Mangrove removal to enable use of structures, for function of drainage & infrastructure outside of CPA1 = 30m2 in CPA2⁶ and 200m2 in General Management Area⁷. <p>Controlled Activity rules:</p> <ul style="list-style-type: none"> • Mangrove removal to enable use of structures, for function of drainage & infrastructure) = 30m2 in CPA1 = or for greater area than provided for in permitted activity rule. • Mangrove removal to maintain open space nature of identified significant wading bird areas. <p>Restricted Discretionary rule:</p> <ul style="list-style-type: none"> • Mangrove removal in the General Management Area (other than as provided for as a permitted or controlled activity). <p>Discretionary Activity rules:</p> <ul style="list-style-type: none"> • Mangrove removal in CPA2 areas (other than as provided for as a permitted or controlled activity). • Mangrove removal in CPA1 areas for listed purposes, including maintaining or enhancing public access consistent with CPA1 values, enabling the operation, maintenance of structures, infrastructure and drainage systems.

⁵ Coastal Protection Area 1; most highly valued and vulnerable ecological or geological areas that are identified in the ARP:C maps and in Schedule

⁶ Coastal Protection Area 2: valued ecological and geological areas, generally larger and more robust areas that are identified in the ARP:C maps and in Schedule 3

⁷ General Management Area: includes the majority of the coastal marine area that is not identified as a specific management area (e.g port, marina) or CPA1 or CPA2 areas

		<p>Non-complying Activity rule:</p> <ul style="list-style-type: none"> Mangrove removal in CPA1 areas other than as provided for in other rules.
Northland Regional Council	Specific policy – recognises issue of mangrove encroachment.	<p>Permitted Activity rule:</p> <ul style="list-style-type: none"> Removal or pruning of mangroves in Marine 2⁸ and Marine 6⁹ areas where interfering with use of structure of facilities or blocking man-made drainage channels <p>Controlled Activity rules:</p> <ul style="list-style-type: none"> Removal of obstructions from artificial drains. Removal or pruning in road reserves or adjacent to state highway in Marine 1¹⁰ areas. Removal and pruning in Marine 2 areas and in Marine 5¹¹ areas = by roading authority where interfering with roading networks. Removal or pruning in Marine 3¹² areas and in Marine 5 areas = where obstructing access, interfering with operation of structures and blocking man-made drainage channels. Removal or pruning in Marine 4¹³ areas where interfering with use and operation of authorised structures. <p>Restricted Discretionary Activity rule:</p> <ul style="list-style-type: none"> In Marine 1 areas except as provided for in other rules and in Marine 2 and Marine 4 areas = removal or pruning where obstructing lawful public access or safe operation and use of structures or roads or blocking channels where land is likely to become flooded. <p>Non-complying Activity rule:</p>

⁸ Marine 2 (Conservation) Management Area is applied to areas to be managed to conserve ecological, cultural and amenity values while still providing for appropriate use and development (NRC Regional Coastal Plan pg 245)

⁹ Marine 6 (Wharves) Management Area are those wharves and adjacent coastal marine area being managed primarily for commercial and mixed uses (12 wharves are listed) (NRC Regional Coastal Plan pg 311)

¹⁰ Marine 1 (Protection) Management Areas are those identified as being areas of important conservation value. The priority in these areas will be the protection of conservation values (NRC Regional Coastal Plan pg 225)

¹¹ Marine 5 (Port Facilities) Management Areas are those managed primarily for port related purposes (commercial ships) (NRC Regional Coastal Plan pg 293)

¹² Marine 3 (Marine Farming) Management Area is primarily managed for marine farming (NRC Regional Coastal Plan pg 267)

¹³ Marine 4 (Moorings) Management Areas are those being managed primarily for boat mooring (outer limits shown on the plan maps) (NRC Regional Coastal Plan pg 277)

		<ul style="list-style-type: none"> In Marine 1 areas – removal or pruning that is not provided for in other rules.
Waikato Regional Council	No specific policy. Apply general policy regarding maintaining existing amenity and recreational values.	<p>Permitted Activity rule:</p> <ul style="list-style-type: none"> To maintain boat access or launching, or to maintain existing drainage outlets or floodgates = less than 10 m2 <p>Discretionary Activity rule:</p> <ul style="list-style-type: none"> For removal of mangrove plants and seedlings.
Bay of Plenty Regional Council	No specific policy , but governed by the policies in the Coastal Environment Plan, including general policy in relation to maintaining public access and recreational amenity.	<p>Discretionary Activity rule:</p> <ul style="list-style-type: none"> For removal of mangrove plants and seedlings.